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ABSTRACT

Guidelines are presented for use by educational administrators in selecting a microcomputer for administrative purposes. The selection process described is based on the determination of functions to be automated, and the identification of the software that best automates these functions. Topics addressed include general software applications that can be used for educational administration functions, software specific to educational administration functions, criteria for evaluating software and hardware, microcomputers connected to mainframe computers, data management systems, electronic spread sheet systems, and word processing systems. A non-evaluative listing is provided of specific programs available for the following categories: athletics; attendance accounting; budgeting, accounting and other business management software for the district level and the school level; grade analysis and reporting; guidance; information for management; instructional management; inventory and property records; media center; planning; scheduling; staff personnel; and student records. A four-page list of software sources completes the document. (LMM)

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THE EDUCATIONAL ADMINISTRATOR'S SURVIVAL GUIDE TO ADMINISTRATIVE USES OF MICROCOMPUTERS

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This document was previously called Educational Admin-
istration Applications Resources for Microcomputers.

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INTRODUCTION

Educational administrators are trying to thrive and survive with the latest rage of the computer age - the microcomputer. The earlier generations of these electronic marvels were appropriate only for instructional use; this was primarily because of their small capacity for the storage of data. But some microcomputers now available equal the storage capacity of many older, full-size computers. In addition they are simpler to use and more affordable than ever before. Thus, microcomputers are now available to assist in performing administrative functions in education.

In brief, there are three basic steps to follow in deciding what microcomputer to purchase for administrative purposes:

1. Decide what functions should be automated and in what order of priority;
2. Identify the microcomputer software (programs) that best automates these functions; and
3. Identify the hardware (microcomputer equipment) that runs the selected software.

DETERMINATION OF FUNCTIONS TO BE AUTOMATED

When educational administrators consider a change to computerizing some of their office functions, some major inhibitors may exist; namely:

1. initial cost, in that the initial hardware and software costs might outweigh the benefits to be gained;
2. computer illiteracy, i. e., the lack of knowledge of what functions can or cannot be performed by a computer;
3. computer phobia, i. e., the fear of problems which a computer might cause; and
4. security, i. e., the methods needed to assure limited access to data.

Each of these inhibitors will need to be resolved for the unique conditions of the setting in which the computerization is to happen. Uncertainty should not be an excuse for inaction. Conduct a cost/benefit analysis for each function being considered for computerization. Computerize only those functions which the computer can more efficiently and effectively perform. Unfortunately this decision is not an easy one to make until you understand what computers can do. By taking a little time to become computer literate before deciding what to computerize and how best to do it, you can potentially save much money, time, and agony later. The selection of a computer for administrative use should receive as much consideration as the selection of a new member of the administrative team. Determine which manually performed tasks that could be computerized require the most work and/or the most time. The careful outlining of user requirements will help in defining the computer system needed and in minimizing the technical knowledge needed for selection by an educational administrator.

Fears of problems resulting from computerization will have to be resolved. Attend a course providing deeper insight than mere "selling" information. Try to attend a course providing hands-on experience. Remember to involve the feelings and desires of your employees in the selection process.

Security requirements will have to be provided for. Plan to implement a password system to restrict access to confidential or secured information. Plan to keep disks and tapes in a secure location.

If for no other reason than future planning, consider all potential administrative uses for a microcomputer when deciding what functions should be automated. Do not make the mistake of purchasing a microcomputer this year that does not have the capacity to do next year's additional functions.

Some microcomputer purchasers might erroneously assume that computer systems solve problems. They do not; they perform functions. These functions may be part of the solution, but the overall solution also includes functions performed manually as well as possibly by other equipment. The way in which a salesperson approaches you as a customer is very important. Avoid a salesperson who tries to sell you computers; choose one who tries to sell you functions. People provide solutions, aided by computers. There is a subtle distinction between treating a computer as the solution and regarding it as a tool which humans use to solve problems.

Three situations would generally justify the use of a computer; namely:

1. when massive amounts of data are processed through well-defined operations;
2. when processing is highly repetitive; or
3. when speed of processing is of great importance.

SOFTWARE WITH GENERAL APPLICABILITY WHICH CAN BE USED FOR THE FUNCTIONS OF EDUCATIONAL ADMINISTRATION

When looking for the correct software to automate your functions, consider first software with general applicability rather than software specifically applicable to the functions of educational administration. General applications software are of three basic types: data management systems, electronic spread sheet systems, and word processing systems. Each of these will be explained in detail in the appendix, where several software selections for each are identified.

Consider acquiring software packages of general applicability that are compatible with each other to facilitate passing a product of one to another for integrated report production. Specifically, their files should be in Data Interchange Format (DIF). "Context MBA" (Context Management Systems) and "1-2-3" (Lotus Development) are combination software packages that perform all of the functions of the general applications software identified earlier.

Software with general applicability has several advantages over software that is more specific to the functions of educational administration:

1. It is more cost effective because of the multiplicity of its uses. (This is because there are more similarities to processing data from the different administrative functions than there are differences.)
2. It will allow the user more flexibility in designing formats for data input, data files, and information output. (It might better meet your needs with more flexibility.)
3. It is available from a local retailer rather than from a mail-order supplier.
4. It is less likely to have "bugs" in it which may cause problems when you are using it.

**SOFTWARE SPECIFIC TO THE FUNCTIONS
OF EDUCATIONAL ADMINISTRATION**

In some situations software specific to the functions of educational administration may be the best solution for your microcomputing needs. Over 200 kinds of this software exist and are presented in the appendix in the following functional categories:

1. Athletics;
2. Attendance Accounting;
3. Budgeting, Accounting, and other Business Management Software (presented in two groups based upon school or district level applicability);
4. Grade Analysis and Reporting;
5. Guidance;
6. Information for Management;
7. Instructional Management;
8. Inventory and Property Records;
9. Media Center;
10. Planning;
11. Scheduling;
12. Staff Personnel; and
13. Student Records.

Samples of documentation and descriptions for the software listed are available for review at this FASA Conference and in the Department of Education's microcomputer laboratory. In these listings the software producers with a "REF" after their name have supplied a list of district and/or school references using their software.

The potential user of software specific to the functions of educational administration must recognize that much of it has been developed recently. This recent development may mean that some "bugs" still exist in the purchased software. Therefore, the potential user should protect himself from later problems at the time of purchase. An application sold "as is" means just what it says; you "buys" the package and you "takes" your chances. Let the buyer beware.

The software packages which appear in this publication have been prepared by both professional and amateur programmers for use on Apple, Atari, Commodore, IBM Personal, Tandy Radio Shack, and Texas Instruments microcomputers. Direct all inquiries and correspondence concerning the programs to the respective authors or companies at the addresses given in the appendix of this publication or to your dealer who may retail some of the programs with more general application.

Generally, the educational administration applications software which pleases users the most comes from companies having some designers who were educational administrators first and microcomputer experts second. Also the companies which have been producing educational administration applications software for the greatest amount of time usually have computer programs with fewer errors. A company which is producing well-designed and written educational administration applications software should willingly refer you to half a dozen school districts using its programs.

CRITERIA FOR EVALUATING SOFTWARE

Evaluate software based upon criteria. Since some criteria will be more important to one reader than to another, weights should be determined for the criteria to reflect their relative importance. The criteria are as follows:

GENERAL QUESTIONS

1. Will the software do what it claims to do?
2. Is the purpose of the software appropriate for computer processing? (If you could do the same thing manually, are there good reasons for using a computer instead?)
3. Can the software be returned for a full refund within 30 days after receipt? (If not, what satisfaction can the dissatisfied purchaser obtain?)
4. Does the company make adequate provision for back-up copies? (The best plan is to have a back-up copy available on-site. However the company should at least agree to send you one overnight in the mail.)
5. If the software is to be used at multiple sites, will the company sell multiple copies at a discount? (Terms on volume purchases are definitely negotiable.)
6. Are installation assistance and user training provided as a part of the purchase price? (The more complicated the function being performed, the more important user training, support, and service become.)
7. Is support available from the supplier through a toll-free phone number?

- 1 8. Does the software provide for some form of se-
2 curity, especially for financial and confiden-
3 tial student data? (Several levels of securi-
4 ty might be desirable and could be incorpora-
5 ted into the software at little extra cost.)
6 9. Is the software capable of being integrated
7 with any other software? (The data you use in
8 one program should be useable in another. Spe-
9 cifically, it should be in DIF form.)
10 10. Is the software flexible enough to meet your
11 school district needs and yet not so complex
12 as to be confusing? (The best software is de-
13 signed with the goal of being flexible but sim-
14 ple. Most software can be modified to meet lo-
15 cal needs at a reasonable cost.)
16
17
18

DOCUMENTATION QUESTIONS

- 19
20 11. Is the documentation provided with the soft-
21 ware complete, clear, understandable, consis-
22 tently written, well-organized, etc.? (Do not
23 underrate the value of good documentation.
24 Also, do not let the appearance of good docu-
25 mentation mislead you into believing that the
26 software has been prepared with the same
27 amount of care.)
28 12. Does the documentation have a thorough index
29 and table of contents for quick reference, a
30 help section, illustrations of input screen
31 displays and output report formats, descrip-
32 tions of file capacities, and an overview of
33 the system?
34 13. Does the documentation provide an understand-
35 able way for the user to calculate the number
36 of records; that is, all of the data to be
37 kept on each student, each teacher, each ac-
38 count, etc.; which can be physically stored on
39 one disk? (Before purchasing the software,
40 the potential user should be able to determine
41 whether a floppy or a hard disk configuration
42 of hardware should be used to handle the
43 functions being considered.)
44 14. Does the company provide periodical updates to
45 the documentation and the software at little
46 or no extra cost? (A good company revises its
47 software periodically and should provide the
48 revisions to existing users at little or no
49 extra cost. Revisions which correct errors in
50 previous editions should be provided at no
51 extra cost.)

INPUT QUESTIONS

15. Are fields for entering data well-defined and self-prompting? (When the software is requesting data, no confusion should exist about what kind of data is to be entered, where it is to be entered, and at what time.)
16. Are potential errors at the time of input well-diagnosed and described in an understandable way? (The software should not signal an error down in the machine-language jungle if all you did was type in a letter where you were supposed to type in a number or if you made some other reasonable input error.)
17. Are data fields designed to accomodate the sizes and formats of data in common use in schools?
18. Can user-defined data fields be created?
19. If need exists to recall a specific record, can it be accessed by searching any field for its specific contents? (If one of the fields is first name, can all records with first name of John be accessed one at a time?)

PROCESSING QUESTIONS

20. Is the software menu driven? And if so, is the order of selection on the menu the same as the sequence of operation of the programs in normal use? (A menu driven software package is composed of a number of separate programs to perform different tasks. The user selects which of these tasks are to be performed from a list referred to as the menu. A menu driven software package is easier to use.)
21. When the software is running, does it give the user feedback about what part of the processing is taking place? (During the operation of the software, pauses of varying lengths may occur while the microcomputer is processing data. During these pauses, some kind of feedback should be given to the user on the video to indicate that processing is proceeding normally.)
22. Does the software provide for easy restart and recovery in case problems occur? (If something out of the ordinary happens during processing, can the program be restarted without returning to the beginning?)

OUTPUT QUESTIONS

23. Does the design and format of information produced by the software meet district, state, and/or federal requirements so that this information will not have to be entered onto other forms by hand? (This criterion may determine the selection of software to be from a vendor located in your state or one that designed the software for your state.)
24. Upon output of the information, does the user have the option to have it printed on paper or displayed on a video screen? (If the output can be reviewed on a video before it is printed, the time required to run the printer, as well as the paper consumed, can be saved while it is reviewed for errors.)
25. Are reports formatted in an easy-to-read manner using appropriate abbreviations, spacing, and print size?

DETERMINATION OF HARDWARE

With the information contained in this publication, an educational administrator should be able to determine what microcomputer software will perform the functions desired. The choice of the hardware should then be based upon the selection of software.

Some microcomputer buyers might assume that everyone should go about buying a computer in the same way, and therefore there is some mythical best buy. How you go about buying a computer will depend primarily on the functions which the computer is to perform for you. In addition your best buy will depend upon your personal preferences using the criteria presented later. No expert, except for the respective company sales representatives, has yet been able to say categorically that one microcomputer is better than any other.

It is not necessary to become involved in the technical detail of the hardware. The detail introduced later in the criteria is sufficient to make an informed choice among alternative microcomputer models. Ask for explanations in English every time conversation with a salesperson drifts to technical jargon.

CRITERIA FOR EVALUATING HARDWARE

Evaluate hardware based upon criteria. Since some criteria will be more important to one reader than to another, weights should be determined for the criteria to reflect their relative importance. The criteria are as follows:

1. Is the keyboard easy to use? (Is it a standard typewriter keyboard? For situations involving a significant amount of numeric data, does the keyboard have a separate numeric keypad?)
2. Is the monitor/screen appropriate for the applications planned? (Is the black-and-white, green phosphor, color, etc. screen best for your use? What degree of resolution, clarity, and readability should the screen have? How many lines vertically and characters horizontally should the screen have? For word processing an 80 character wide screen will be best. The screen's diagonal measurement could reasonably be anywhere from 9 to 25 inches.)
3. Is the printer appropriate for the planned uses of output information? (Is a thermal, dot-matrix, or character impact printer best? Is a tractor-feed or friction-feed printer better? Should the paper width be for 80-column or 132-column paper? What about noise level?)
4. How much and what kind of primary storage should be available? (Should the random access memory be 32K, 48K, 64K, 128K, etc.? What features should the read only memory have?)
5. How much and what kind of secondary storage should be available? (What combination of cassette tape, floppy disk, hard disk, and program module storage devices should be present? What storage capability should each have?)
6. What kind of processing speed is desirable? (Be sure to check the speed of the computer as well as that of the storage devices and the printer.)

- 1 7. How available is other software for the
2 microcomputer? (The best hardware is worth
3 little without good software.)
- 4
- 5 8. What operating system is necessary for the
6 software being considered.
- 7
- 8 9. What type of interfacing with other computers
9 is desirable? (Should the microcomputer be
10 networked with others? Should it be capable of
11 being connected to a mainframe computer? More
12 on this topic is coming later.)
- 13
- 14 10. What kind of reliability and durability does
15 the hardware have? (Ask other users of the
16 same hardware what problems they have had?)
- 17
- 18 11. How expandable should the hardware configura-
19 tion be for future uses? (What type of addi-
20 tions of disks, memory, printers, optical rea-
21 ders, light pens, networking, data transfer to
22 other computers, etc. should be provided for?)
- 23
- 24 12. What kind of reputation does the manufacturer
25 as well as the retailer have for support?
26 (Support should include installation, service,
27 and training.)
- 28
- 29 13. What will it all cost? (The initial purchase
30 cost, maintenance cost, software cost, train-
31 ing cost, etc. all need to be considered.)
- 32

33 A minimum microcomputer configuration for administra-
34 tive purposes should be:

- 35
- 36 1. a standard typewriter keyboard,
- 37
- 38 2. an 80-character wide screen with a diagonal
39 measure of at least 12 inches,
- 40
- 41 3. a 132-column wide quality dot-matrix or charac-
42 ter impact printer,
- 43
- 44 4. 64 K memory, and
- 45
- 46 5. 2 floppy disk drives.
- 47

48

49 Perhaps choosing a microcomputer is like selecting a
50 spouse: (1) dozens of nearly identical models from which to
51 make a choice exist, (2) the packaging can be misleading,
52 and (3) once you make the choice you are stuck with the fami-
53 ly that comes with it.

Some examples of word processing systems are:

Benchmark (Metasort)

ScriptTM, a trade mark of the Tandy Corporation
(Tandy Radio Shack)

Word Pro 4 Plus (Professional Software Dealers)

Wordstar (Micro Pro International)

5. searching, deleting, and replacing key words, phrases, sentences, and paragraphs anywhere in the text;
6. composing letters by selecting any number of standard paragraphs from a master file that contains a large number paragraphs;
7. creating and justifying both margins;
8. centering specified lines of text or titles on pages horizontally between margins;
9. centering of text vertically on a page;
10. subscripting, superscripting, underlining, and bold printing;
11. tabulating and indenting;
12. automatic formatting of lists and tables;
13. document page formatting: length, number, and spacing of lines;
14. automatic placement of header and footer or trailer items on a page;
15. automatic pagination and dating;
16. video viewing of text as it will later appear on paper; and
17. creating mailing labels.

Capabilities can go on almost indefinitely. In larger microcomputers entire lexicons of words can be stored in order that the entire text can be checked for spelling, hyphenation of words at the end of lines, and capitalization of proper nouns. Grammar checkers are coming. Such capabilities make it possible for near-illiterates to use a microcomputer for word processing. However since we are in the education business, naturally we do not have any clerical klutzes on our staff and may not need these extra features.

Available word processing equipment ranges from memory typewriters to entire systems costing ten thousand or more dollars that approach the automated office concept. Someone who wishes to use word processing to write routine letters does not want or need the capabilities or complexities of a word processing system designed to maintain manuals or books. If your needs are simple, choose a simple word processing system.

Until recently computerized word processing has been available only to those who could afford a mainframe computer, a good sized minicomputer, or a dedicated word processor. Now microcomputers make it possible for a small administrative center such as a school office to produce letter perfect correspondence. Goodbye to correction fluids and lift-off tapes. By using word processing, you can avoid the draft.

WORD PROCESSING SYSTEMS

Word processing is the writing of new text or the recalling of a previously written text from memory, editing it, and producing it in a final form on paper. In order to choose word processing software for a microcomputer, the prospective purchaser should have a good understanding of the concept of word processing and an idea of what features can go into a word processing system. Your own word processing needs will determine which features are most important to you.

The computer offers a radical change in your present manual mode of word processing. With manual word processing all corrections and modifications must be done on paper. A succession of modified manual versions creates a succession of paper copies. Correcting one little typing mistake could mean the production of an entire new page. With computerized word processing all correcting, editing, and modifying can be done in the computer's memory. Nothing need be committed to paper until the document is perfect. When all of the changes have been made in the document, the production of an error-free page on paper then takes only a minute or so.

Proposals, contracts, forms, reports, and some letters may involve a great deal of standardized text or "boilerplate," possibly with minor changes. Word processing allows you to go into the boilerplate; cut out inapplicable words, phrases, sentences, and paragraphs; or substitute others at will. There is no need to retype the entire document. When the changes are made, the microcomputer will print out an original. The skeleton boilerplate remains on a disk for later use.

The simplest word processing systems allow you to type text, correct typographical errors, store the document as it appears on your display, and then automatically type it out in its correct form. Other features of word processing systems are:

1. adding or deleting characters, words, sentences, lines, or paragraphs anywhere in the text;
2. correcting text errors;
3. moving sentences or paragraphs to different parts of the text, i.e., cut and paste;
4. inserting special text;

ELECTRONIC SPREAD SHEET SYSTEMS

An electronic spread sheet system handles the kind of data and information which you would normally put in a table with rows and columns and their respective headings. A typical table would have 63 columns and 254 rows with which to work. Within these parameters you can create many desirable formats and perform just about whatever calculation or manipulation of figures you desire. Most problems which can be solved with a calculator, a pencil, and a sheet of paper could be solved with an electronic spread sheet system on a microcomputer. The video screen on the microcomputer becomes a window through which part(s) of the large electronic spread sheet can be viewed. The screen can be split either horizontally or vertically to view two parts of the electronic spread sheet simultaneously. Or the screen can be scrolled horizontally or vertically to view any one section of the electronic work sheet. Electronic spread sheet systems turn a sea of data into data that you can see.

The electronic spread sheet is a matrix of columns and rows, the intersections of which define about 16,000 positions into which one can enter a number, an alphabetic title, or a formula to be calculated. If you wish, for example, you can make your electronic spread sheet look just like your school's monthly budget/expenditure report. The rows would become combination function-object budget entities and the columns would become (1) final budget amounts, (2) expenditures for the year-to-date, (3) outstanding encumbrances or commitments, (4) proposed expenditures, and (5) unencumbered and uncommitted balances which can be appropriated. If you want to see what would happen to your school's entire budget when changes are made to any function-object entities on this electronic spread sheet, an entirely new budget document can be generated incorporating these changes instantly. Thus "what if" types of questions can be easily answered. If these same calculations were done manually, hours of time could be invested to obtain the same result.

Examples of electronic spread sheet systems are:

MultiplanTM, a trademark of the Microsoft Corporation

Supercalc (Sorcim)

VisicalcTM, a trademark of the Visi Corporation

7. file maintenance procedures for adding, deleting, updating, inspecting, marking, and scanning records;
8. sorting procedures in ascending and descending order for multiple fields;
9. expandability for field sizes, record sizes, and file sizes;
10. arithmetic capability with computed fields;
11. reporting options for video display and hard-copy, column specification, totals by control break fields, final totals, and columnar and other vertical headings;
12. the accessibility to different parts of each record by people with different levels of security authorization; and
13. the accessibility of the file created by the data management system by other software.

Data management systems are unappreciated and misunderstood by many microcomputer buyers. Because of the usefulness of these systems, a microcomputer buyer should try out a good data management system to determine the many potential uses which can be made of it. In a school setting, a good data management system could be useful in attendance accounting, instructional management, inventory and property records, media center management, and student records.

Some examples of data management systems are:

dBASE IITM, a trademark of the Ashton-Tate Corporation

D B Master (Stoneware)

Personal Filing System and PFS Report (Software Publishing Company)

Profile (Landy Radio Shack)

VisifileTM, a trademark of the Visi Corporation, formerly known as CCA DMS

DATA MANAGEMENT SYSTEMS

A data base is the computer equivalent of a filing cabinet full of information. You create your own data base and store within it any kind of information which you may subsequently want to retrieve. The information retrieved can be used to refresh your memory or to generate reports. A good data management system will give you significant ability to generate reports, without programming, so that information from the data base can be printed with the format most useful to you. When looking at any data management system, you should expect it to make sense to you even when you know nothing about computers or programming, even when you do not understand what a data base is.

In your encounters with computer literature and salespeople you will hear words such as fields, records, and files associated with a data management system. There is nothing difficult about their meanings. A field is a unit of information. Examples of a field are student's last name, first name, birthdate, homeroom number, etc. The next building block is a record, which is a meaningful collection of fields. The previously listed examples of fields could be grouped together and called a record, specifically a student record. The last building block is a file, which is a meaningful collection of records. All of the student records form a student file. Analogously in a non-automated filing system used by a principal, the file cabinets and drawers would be the file, the individual student folders in each file drawer would be the records, and the individual items of information on each student in the folders would be the fields. Now when a salesperson attempts to show you with computerese about data management systems, you will be able to get the drift of the salespitch.

A number of characteristics considered desirable for a data management system are:

1. user oriented operating procedures;
2. operating procedures which initiate each routine from a menu of selections;
3. acceptable requirements for main memory and external storage (e.g., floppy disks);
4. flexibility for input data and output information formats;
5. specialized input data formats for dates, monetary quantities, and decimal specifications;
6. data storage which stores each field of data only once;

OTHER RESOURCES

Holznagel, Donald. "Criteria for Review of Administrative Applications and Instructional Management Software." Northwest Regional Education Laboratory, 300 S. W. Sixth Avenue, Portland, OR 97204

Little, Joseph R., Mackey, Philip E., and Tuscher, Leroy J. Micros for Managers: A Software Guide for School Administrators. New Jersey School Boards Association, 315 West State Street, P. O. Box 909, Trenton, NJ 08605, 1983, \$28.00.

Pogrow, Stanley. Associate Professor of Educational Administration at the University of Arizona. "The Administrator's Notebook: Microcomputerizing Your Paperwork," Electronic Learning. Scholastic, Inc., 730 Broadway, New York, NY 10003. September, 1982, pp. 55-59; October, 1982, pp. 20, 22, 24, 26, and 27; November/December, 1982, pp. 34, 36, 40, 41, and 42; January, 1983, pp. 32 and 34.

MICROCOMPUTERS CONNECTED TO MAINFRAME COMPUTERS

Some microcomputers not only perform the aforementioned functions, but they also can be connected to mainframe (full-size) computers by telephone. This feature permits a microcomputer to transfer data to and from a mainframe computer, referred to in computerese as "uploading" and "downloading." A microcomputer can therefore be used both as a terminal to the mainframe computer as well as a self-contained computer. The advantages of using a mainframe computer to process or to store massive amounts of data or to perform complex analyses quickly can thereby be achieved. Perhaps the best of both worlds can therefore be had with only a microcomputer.

The Palm Beach County School District has developed a microcomputer system connected to its mainframe computer for (1) assessing the progress of students through a multi-level unified curriculum, (2) accounting and reporting attendance and FTE, (3) maintaining student and teacher information files, (4) word processing, and (5) other miscellaneous functions.

In addition to Palm Beach County, Baker, Gadsden, Lafayette, and Suwannee County School Districts are working on connecting microcomputers to mainframe computers.

DISCLAIMER

The Florida Department of Education has not examined or evaluated the software listed herein, and it makes no recommendations, expressed or implied, with respect to their availability, accuracy, reliability, capacity, performance, hardware requirements, or whether such programs are appropriate for the purposes for which they were intended. The Florida Department of Education disclaims any and all attempts made at humor in this publication. So does the author.

ATHLETICS

Champs Football Scouting Program (Tandy Radio Shack)
Grid Scout: Football Scouting System (Microscout) REF
Grid Scout: Opponent Defense Program (Microscout) REF
Grid Scout: Opponent Offense Program (Microscout) REF
Grid Scout: Self Defense Program (Microscout) REF
Grid Scout: Self Offense Program (Microscout) REF
Team Sports Management (EDIS Systems)

See also: Budgeting, Accounting, and Other Business
Management Packages - School Level.

ATTENDANCE ACCOUNTING

Absentee Reporting (EDIS Systems)
Administrator's Apple Package (JEM Research)
Attendance (School Management Systems - California)
Attendance (School Management Systems - Oregon)
Attendance Accounting (Data Processing Consultants)
Attendance Program (Charles Mann & Associates)
Attendance Program (JEM Research)
Attendance Recorder (Scott, Foresman and Company)
Attendance Reporting (Microphys) REF
Attendance System (Pasco County School District)
BU-2 Package (C.E.R.F.)
Computerized Attendance (Reichows Computer Software)
Daily Attendance System (Applied Educational Systems)
ESM-100 (Educational Software and Marketing) REF
The Officer (Mount Castor Industries)
School's Administrative Student Info System
(Educational Time-Sharing Systems)
School Attendance (H.E.I.)
School Attendance (Random House)
School Attendance Program (Bertamax)
School Attendance Program (Consolidated Energy Corp.)
School Attendance SystemTM (Educational Administration Data Systems) REF
School Attendance System (Educational Connection)
Schools Administrative Student Information (Micro-logic)
Student Accounting (Bridger High School District) REF
Student Attendance System (Computer Resources) REF
Student Information System (optional attendance package Educational Performance Systems)

Note: School Attendance System is a trademark of Educational Administration Data Systems.

BUDGETING, ACCOUNTING, AND OTHER
BUSINESS MANAGEMENT SOFTWARE
DISTRICT LEVEL

Accounting Assistant (Scott, Foresman and Company)
Accounts Payable (Mega Systems) REF
Accounts Payable (School Management Systems - Oregon)
Bridger Software Package (Bridger High School District)
REF
Budgetary and Fund Accounting (Data Processing
Consultants)
Budgeting (Mega Systems)
Cost Center Budgetary Control (Educational Performance
Systems)
Double Entry Fund System (School Management Systems -
Oregon)
Electronic Spread Sheet Systems (See page Appendix 3.)
Energy Manager (Addison-Wesley Publishing Company) REF
Financial Accounting (Educational Performance Systems)
Food Service Analysis (Educational Performance Systems)
Food Service Systems (Seminole County School District)
Fund Accounting System (School Management Systems -
Oregon)
General Ledger (Mega Systems)
Micro Budget (Robert Davis and Associates)
Microcomputer Integrated Computerized Accounting System
(Minnesota Educational Computing Consortium)
Operation and Maintenance Analysis (Educational
Performance Systems)
Payroll (Mega Systems)
Payroll (School Management Systems - Oregon)
Payroll Assistant (Scott, Foresman and Company)
Payroll Package (Data Processing Consultants)
Purchase (Addison-Wesley Publishing Company) REF
Purchasing (Mega Systems)
Revenue Accounting (Mega Systems)
Salary Planner (Scott, Foresman and Company)
School Accounting (Computer Software)
Teacher Salary Negotiations Analyzer (BOR-VEN Computer
Service) REF
Transportation System (EDIS Systems)

See also: Inventory and Property Records.

Note: Many private enterprise accounting software packages are available from both hardware and software vendors. Before assuming that one of these packages can be used for school district accounting, a thorough evaluation and test should be conducted first.

BUDGETING, ACCOUNTING, AND OTHER
BUSINESS MANAGEMENT SOFTWARE
SCHOOL LEVEL

Activity Accountant (Scott, Foresman and Company)
Budget (Commodore Business Machines)
Budgetary Control and Planning (EDIS Systems)
Budget Officer (Educational Microcomputer Associates)
Budget System - Educational Institutions (Commodore
Business Machines)
Bursar (Addison-Wesley Publishing Company) REF
Cafeteria Management (EDIS Systems)
Electronic Spread Sheet Systems (See page Appendix 3.)
Internal Accounting System (Educational Performance
Systems)
Project Planning and Budgeting (Charles Mann &
Associates)
Purchase (Addison-Wesley Publishing Company)
Student Billing System (School Management Systems -
Oregon)

See also: Inventory and Property Records.

GRADE ANALYSIS AND REPORTING

Assistant Principal (Monument Computer Service)
Class Data Recorder (Scott, Foresman and Company)
Electric Grade Book (Charles Mann & Associates)
ESM-100 (Educational Software Marketing) REF
Grade Accounting (Data Processing Consultants)
Grade Accounting (J & S Software)
Gradebook Plus (Educational Microcomputer Associates)
Grade Distribution (Pasco County School District)
Grade Reporting (Bell and Howell)
Grade Keeping SystemTM (Educational Administration
Data Systems)
Grade Reporting System (Applied Educational Systems)
Grade Reporting System (Unicom)
Grades Manager (Indian Head Software)
Grading Systems Program (Charles Mann & Associates)
Mark Reporter (Scott, Foresman and Company)
Permanent Records (EDIS Systems)
Records (Microsoftware Services)
The Reporter (Mount Castor Industries)
School's Administrative Student Information (Micro-
logic)
School's Administrative Student Info System
(Educational Time-Sharing Systems)
School Gradebook (Educational Connection)
Student Information System (Educational Performance
Systems)
Student Record System (School Management Systems -
Oregon)

Note: Grade Keeping System is a trademark of Educa-
tional Administration Data Systems.

G U I D A N C E

Career Information System (Random House)
Computerized Career Information System (Bertamax)
Counselor Support Package (B & B Software)
Discover II (Discover/ACT)
Guidance Information SystemTM (Houghton Mifflin)
QUEST (National Career Information Service)
System of Interactive Guidance and Information [SIGI]
(Educational Testing Service) REF

See also: Student Records.

Note: Guidance Information System is a trademark of
Houghton Mifflin.

INFORMATION FOR MANAGEMENT

Compuserve (Compuserve)
School Practices Information Network [SPIN] (Scott,
Foresman and Company)
The Source (Reader's Digest Association)

Note: These listings are online information services to
which a microcomputer can be connected.

INSTRUCTIONAL MANAGEMENT

Class Computer Learning and Scoring System (Holt,
Rinehart, & Winston)
The Class Manager (Society for Visual Education)
Comprehensive Achievement Monitoring (H.E.I.)
Computer Managed Special Education (A. U. Software)
Curriculum Management System (Learning Tools)
Curriculum Manager (Corporation for Public Information
in Education) REF
Customized Instructional Management System (Random
House)
Data Analyzer (Scott, Foresman and Company)
Data Management Systems (See pages Appendix 1 & 2.)
ESM-100 (Educational Software and Marketing) REF
Florida State Assessment Class Profile (Pasco County
School District)
High Motivation Reading Series Student Records System
(Tandy Radio Shack)
Individual Education Plan (Educational Performance
Systems)
M. A. T. Raw Score Conversion (Pasco County School
District)
Modularized Student Management System (Microcomputer
Education Applications Network)
Ozona Elementary School Primary Education Program
System (Inquiries should be directed to the
Florida Department of Education.)
School Test Scoring (Educational Connection)
Student Placement (Pasco County School District)
The Test Bank (Advanced Technology Applications)
Test Scorer (Scott, Foresman and Company)
Total Management Information System for Exceptional
Education (Escambia County School District)

INVENTORY AND PROPERTY RECORDS

Administrator's Apple Package (J.E.M. Research)
Book Rental Management (E.D.I.S. Systems)
Data Management Systems (See pages Appendix 1 & 2.)
Equip (Addison-Wesley Publishing Company) REF
Fixed Asset Inventory (Data Processing Consultants)
Fixed Asset Inventory (EDIS Systems)
Inventory (Peachtree Software)
Property Manager (Scott, Foresman and Company)
Property Records (Educational Performance Systems)
School Inventory (Bell & Howell)
School Inventory System (Unicom)
Textbook (J.E.M. Research)

MEDIA CENTER

The Automated Library System (Project Simu-School)
Accession Plus (Right on Programs)
Avcat (School Management Systems - Oregon)
Bibliographic Search and Circulation Control System
 (C.T.I. Library Systems)
Catalog and Label Writer (Society for Visual Education)
Cardprinter (School Management Systems - Oregon)
Catalog It (Right on Programs)
Circulation Control System (C.T.I. Library Systems)
Data Management Systems (See pages Appendix 1 & 2.)
Date Due (Midwest Software)
Electronic Library Aide (Society for Visual Education)
Librarian (Professional Computer Systems)
Library Management (E.D.I.S. Systems)
Order It (Right on Programs)
Overdue Books (Right on Programs)
School Library Media Management (Alachua County School
 District)
Word Processing Systems (See pages Appendix 4 & 5.)

See also: Inventory and Property Records.

PLANNING

College Enrollment Projection (Management Systems
Software)

Electronic Spread Sheet Systems (See page Appendix 3.)

School Utilities Volume I (Minnesota Educational Computing Consortium)

See also: Budgeting, Accounting, and Other Business Management Software - Both District and School Levels.

SCHEDULING

The Classifier (Mount Castor Industries) REF
The Class Scheduling System (Charles Mann & Associates)
Course Scheduling System (Applied Educational Systems)
Current Scheduling (School Management Systems - California)
ESM-100 (Educational Software and Marketing) REF
Master Schedule Information (Pasco County School District)
Micro-Base School System (Micro-Base Corporation)
Scheduling (E.D.I.S. Systems)
Scheduling Assistant (Scott, Foresman and Company)
Scheduling Program (C.E.R.F.)
Scheduling Update System (Microphys)
Scholastic Package (Data Processing Consultants)
School's Administrative Student Information (Micro-logic)
School's Administrative Student Info System (Educational Time-Sharing System)
The School SystemTM Micro-Scheduler (Columbia Computing Services)
Student Information System (Educational Performance Systems)
Student Record System (School Management Systems - Oregon)
Student Registration and Class Scheduling SystemTM (Educational Administration Data Systems)
Student Scheduling (Bridger High School District) REF

Note: Student Registration and Class Scheduling System is a trademark of Educational Administration Data Systems.
The School System is a trademark of Columbia Computing Services.

STAFF PERSONNEL

ESM-100 (Educational Software and Marketing) REF
Personnel Data Recorder (Scott, Foresman and Company)
Personnel and Skills Inventory (Mega Systems) REF
Position Control (Mega Systems) REF
Staff Development (Mega Systems) REF
Teacher File (Pasco County School District)

See also: Budgeting, Accounting, and Other Business Management Software - District Level.

STUDENT RECORDS

Administrative Planning System (Learning Tools)
Administrator's Apple Package (J.E.M. Research)
Advisor's Aid/Curriculum Description (Indian Head Software)
The Assistant Principal (Learning Systems)
Basic Data (School Management Systems - California)
Class Lists (Commodore Business Machines)
Data Management Systems (See pages Appendix 1 & 2.)
Demographic Program (J.E.M. Research)
ESM-100 (Educational Software and Marketing) REF
Graduation Roll (Micro III Educational Systems)
Master Roll (Micro III Educational Systems)
Micro-Base School System (Micro-Base Corporation)
Rekord: Administrator Version (Tandy Radio Shack)
Rekord: Counselor Version (Tandy Radio Shack)
Rekord: Special Funding Version (Tandy Radio Shack)
Scholastic Package (Data Processing Consultants)
School Mailer (Scott, Foresman and Company)
School's Administrative Student Information (Micro-logic)
Student Data Base System (Computer Resources) REF
Student Data Base SystemTM (Educational Administration Data Systems)
Student Data Recorder (Scott, Foresman and Company)
Student Discipline File (Pasco County School District)
Student File (Pasco County School District)
Student Information (E.D.I.S. Systems)
Student Information System (Educational Performance Systems)
Student Record System (School Management Systems - Oregon)

Note: Student Data Base System is a trademark of Educational Administration Data Systems.

SOURCES

The listing of the sources below in no way indicates endorsement by the Florida Department of Education. Software for each source can be found on the pages given below each listing. Pages preceded by the letter "A" are in the Appendix.

Addison-Wesley Publishing Co.
3 Jacob Way
Reading, MA 01867
(617) 944-3700
pp. A9, A10, A15

Advanced Technology Applications
3019 Governor Street
San Diego, CA 92122
(619) 569-2693
p. A14

Alachua County School District
attn.: Dr. William Evans
1817 East University Avenue
Gainesville, FL 32601
(904) 373-5192
p. A16

Apple Computer
20525 Mariani Avenue
Cupertino, CA 95014
(408) 966-1010

Applied Educational Systems
RtD #2, Box 213
Dunbarton, NH 03301
(603) 774-6151
pp. A8, A11, A18

Ashton-Tate Corporation
9929 Jefferson Blvd.
Cuiver City, CA 90230
(213) 204-5570
p. A2

Atari, Inc.
1195 Borregas Avenue
Sunnyvale, CA 94086
(408) 745-2000

A. U. Software
P. O. Box 597
Colleyville, TX 76034
(817) 267-5236
p. A14

B & B Software
P. O. Box 2090
Ann Arbor, MI 48106
(313) 568-8152
p. A12

Bell & Howell
Interactive Communications Div.
7100 North McCormick Road
Chicago, IL 60645
(800) 323-4338
pp. A11, A15

Bertamax, Inc.
101 Nickerson, Suite 550
Seattle, WA 98109
(206) 282-6249
pp. A8, A12

BOR-VEN Computer Service, Inc.
856 Western Avenue
Madison, MN 56256
(612) 598-3785
p. A9

Bridger High School District
427 West Park Avenue
Bridger, MI 59014
(406) 662-3533
pp. A8, A9, A18

C.E.R.F.
1441 North 27th Lane
Phoenix, AZ 85009
(602) 269-8817
pp. A8, A18

Columbia Computing Services, Inc.
8611 South 212th Street
Kent, WA 98031
(800) 426-4824
p. A18

Commodore Business Machines
950 Rittenhouse Road
Norristown, PA 19403
(215) 666-7950
pp. A10, A20

Compuserve
5000 Arlington Centre Blvd.
Columbus, OH 43220
(800) 848-8199
p. A13

Computer Resources, Inc.
Route 4
Barrington, NH 03825
(603) 868-5337
pp. A7, A20

Computer Software
333 North Centinela Ave.
Englewood, CA 90302
(213) 673-8650
p. A9

Consolidated Energy Corp.
2140 Wilston Avenue, S. W.
Roanoke, VA 24014
(703) 981-0326
p. A8

Context Management Systems, Inc.
23864 Hawthorne Blvd., Suite 101
Torrance, CA 90505
(213) 378-8277
p. 3

Corporation for Public Infor-
mation in Education
1714 Illinois
Lawrence, KS 66044
(913) 841-3095
p. A14

C.T.I. Library Systems, Inc.
1455 South State Street
Orem, UT 84057
(801) 224-1390
p. A16

Data Processing Consultants
2405 San Pedro, N. E.
Albuquerque, NM 87110
(505) 884-6042
pp. A8, A9, A11, A15, A18, A20

Robert Davis and Associates
3355 Lenox Road
Atlanta, GA 30304
(404) 261-2001
p. A9

Discover/ACT
The American College Testing
Program
230 Schilling Circle
Hunt Valley, MD 21031
(301) 628-8000
p. A12

E.D.I.S. Systems, Inc.
422 Main Street
Lafayette, IN 47901
(317) 742-1787
pp. A7, A8, A9, A10, A11, A14,
A15, A16, A18, A20

Educational Administration Data
Systems
2241 Greenbriar Drive
Springfield, IL 62704
(217) 787-7190
pp. A8, A11, A18, A20

Educational Connection
1508 Coffee Road, Suite J
Modesto, CA 95355
(209) 576-1611
pp. A8, A11, A14

Educational Microcomputer
Associates
P. O. Box 339
Los Altos, CA 94022
(415) 326-1585
pp. A10, A11

Educational Performance Systems
309 Office Plaza Drive, Suite 204
P. O. Box 12951
Tallahassee, FL 32308
(904) 878-7308
pp. A8, A9, A10, A11, A14, A15, A20

Educational Software and Marketing
1035 Outer Park Drive, Suite 309
Springfield, IL 62704
(217) 787-4594
pp. A8, A11, A14, A18, A19, A20

Educational Testing Service
Princeton, NJ 08541
(609) 734-5165
p. A12

Educational Time-Sharing Systems
1122 East Chapman Avenue, Suite 28
Orange, CA 92669
(714) 997-4980
pp. A8, A11, A19

Escambia County School District
attn.: Curtis Kelow
P. O. Box 1470
Pensacola, FL 32597
(904) 432-6121
p. A14

H.E.I., Inc.
Victoria, MN 55386
(612) 443-2500
pp. A8, A14

Holt, Rinehart, & Winston
383 Madison Avenue
New York, NY 10017
(212) 872-2206
p. A14

Houghton Mifflin Company
P. O. Box 883
Hanover, NH 03755
(603) 443-3838
p. A12

Indian Head Software
1002 Indian Head Drive
Snow Hill, NC 28580
(919) 747-2839
pp. A11, A20

International Business Machines, Inc.
1000 N.W. 51st Street
Boca Raton, FL 33432
(305) 998-2000

J.E.M. Research
Discovery Park
University of Victoria
P. O. Box 1700
Victoria, B. C. V8W 2Y2
(604) 477-7246
pp. A8, A14, A15, A20

J & S Software
149 Reid Avenue
Port Washington, NY 11050
(516) 944-9304
p. A11

Learning Systems, Ltd.
P.O. Box 9046
Fort Collins, CO 80525
(303) 482-6193
p. A20

Learning Tools, Incorporated
686 Massachusetts Avenue
Cambridge, MA 02139
(617) 864-8086
pp. A14, A20

Lotus Development Corp.
55 Wheeler Street
Cambridge, MA 02138
(617) 492-7171
p. 3

Management Systems Software
5200 Brittany Drive #1006
St. Petersburg, FL 33715
(813) 864-4347
p. A17

Charles Mann & Associates
55722 Santa Fe Trail
Yucca Valley, CA 92284
(714) 365-9718
pp. A8, A10, A11, A12, A18

Mega Systems, Incorporated
1601 West Colonial Drive
Orlando, FL 32804
(305) 422-0080
pp. A9, A19

Metasoft Corporation
711 East Cottonwood, Suite E.
Casa Grande, AZ 85222
(602) 836-0266
p. A6

Micro-Base Corporation
521 Windsor Park Drive
Dayton, OH 45342
(513) 439-4560
pp. A18, A20

Microcomputer Education Applica-
tions Network
256 North Washington Street
Falls Church, VA 22046
(703) 536-2310
p. A14

Micro-logic
1685 West Hamlin Road
Rochester, MI 48063
(313) 852-5294
pp. A11, A18, A20

Microphys
2048 Lord Street
Brooklyn, NY 11229
(212) 646-0140
pp. A8, A18

MicroPro International
33 San Pablo Avenue
San Rafael, CA 94903
(415) 499-1200
p. A6

Microscout
2161 Mills Avenue
Menlo Park, CA 94025
(415) 854-4718
p. A7

Microsoft Corporation
10700 Northup Way
Bellevue, WA 98004
(800) 426-9400
p. A3

Microsoftware Services
P. O. Box 776
Harrisonburg, VA 22801
(703) 433-9485
p. A11

Micro III Educational Systems
704 West Pine Street
Fitzgerald, GA 37150
(912) 423-3427
p. A20

Midwest Software
Box 214
Farmington, MI 48024
(313) 477-0897
p. A16

Minnesota Education Computer
Consortium
2520 Broadway Drive
St. Paul, MN 55113
(612) 376-1118
pp. A9, A17

Monument Computer Service
Village Data Center
P. O. Box 603
Joshua Tree, CA 92252
(800) 854-0561
p. A11

Mount Castor Industries
368 Shays Street
Amherst, MA 01002
(413) 253-3634
pp. A8, A11, A18

National Career Information System
University of Oregon, Hendricks Hall
Eugene, OR 97403
(503) 686-3872
p. A12

Palm Beach County School District
attn.: Mark Gaynor or Bob Johnson
3323 Belvedere Road
West Palm Beach, FL 33402
(305) 684-5112
p. 11